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THE PROBLEM OF DEAFNESS*

JAMES E. MARVIL, M. D.,
Laurel, Del.

Deafness is a problem which interests all of us, but is one that most of us do little about. The reason for our apathy is the insidiousness of most cases of deafness. By the time that most patients admit that they cannot hear well the loss of hearing is 50 per cent or more, and permanent changes have taken place. Not only is treatment ineffective at this point, but it is late for the patient to adjust himself to hearing aids, lip reading and other helps which could previously have been accepted more easily and with greater benefit. Many patients come to the otologist with as much as a 60 per cent loss of hearing and complain they can hear very well but cannot understand, or that they get ordinary conversations well, but have trouble in groups.

We have the other type of patient also, the one who comes to the otologist early but treatment is of no benefit For this type of patient the otologist can render a valuable service in helping to conserve the residual hearing, and in helping to get the maximum efficiency from what is left. The medical branches of our Armed Services at present are doing a wonderful job in helping deafened service men learn to use hearing aids, to learn lip reading, and how to adjust themselves to as normal living as is possible. The hard of hearing patient needs a great deal of special care and follow up work. To give a patient a hearing aid and to send him on his way is likely to result in the hearing aid's ending up in the nearest bureau drawer, since the patient expects to hear as he did years ago, and is disappointed that batteries run down, and does not realize that he has forgotten how many things used to sound when his hearing was better.

It has been estimated that there are 150,000 totally deaf persons in this country. About one-half of these are deaf mutes. The number of hard of hearing school children has been estimated at 2,500,000. The number of partially deafened adults is not available, but we all know that it is large. Almost every family has its share of hard of hearing persons.

Deafness is a real disability; it is just as real as any other type. It affects a person's ability to earn a living, and his ability to enjoy the companionship of his fellow man. The hard of hearing often become depressed, nervous and irritable, and develops inferiority complexes because he is unable to take his place in society.

What can we do to help the hard of hearing patient?

First—Accurate diagnosis.

Second—Treatment so that progress of the disease may be arrested and hearing recovered, which is possible in certain conditions.

Third—If treatment is not possible, then the patient should be helped to make the best possible use of the residual hearing. By this it is meant to help the patient select the best hearing aid for his particular case, and see that he persists in using it until he has learned to get the best possible results from it. He should be taught lip reading if possible, and he should be treated from the psychiatric point of view so that he will get over any possible inferiority complexes.

For convenience deafness cases have been divided into two major types

1. Conductive type. This includes abnormalities of the external ear, ear canal, ear drum, middle ear, and ossicles.
2. Perceptive or nerve deafness.

There is a mixed type which is a combination of both the conductive and the perceptive types. In the conductive type of deafness the loss of hearing is usually about the same for all frequencies; while in the perceptive type the hearing loss is usually greater in the high tones. It has been found, however, that there is a loss for high tones at times when the con-

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ductive type is present. This was confirmed by Samuel J. Crowe, of Johns Hopkins, in his work on deafened children.

Narrowing the field further, we find many special subdivisions of the two major types. Under the conductive type:

1. Deafness due to trauma, malformations, or disease of the external ear or canal.

2. Deafness due to disease of the middle ear. This includes healed or unhealed otitis media, catarrhal otitis media, usually associated with diseases of the nasopharynx and sinusitis.

3. Otosclerosis is an entity all its own. Here we find the formation of spongy bone at the junction of the stapes and the capsule of the inner ear. I am sure that all of you are familiar with the work of Dr. Julius Lempert, of New York, who has devised an operation to form a new fistula into the labrynth, with dramatic results in many cases. This operation is still being improved upon, one of the outstanding improvements being accomplished by Dr. Shambaugh, who devised a method of flushing away with normal salt solution the bone dust which accumulated at the site of operation from the drill. This bone dust acted as a graft and caused many failures in the fenestration operation. Many otologists are working full time on the fenestration operation, and it is expected that in the near future the percentage of good results will be much higher.

Under the perceptive or nerve deafness we have:

1. Congenital deafness, where the organ of Corti or cochlear nerve has failed to develop properly.

2. Acquired deafness following acute infectious diseases. This is seen in conditions accompanied by extremely high temperatures (such as epidemic meningitis by its action on the inner ear), scarlet fever, and influenza.

3. Constitutional deafness, as in lues, arteriosclerosis, and in senility.

4. Toxic deafness, as in neuritis of the 8th nerve from acetysalicylic acid, quinine, and other toxic substances.

5. Traumatic deafness resulting from degenerations of the organ of Corti by a sudden loud noise as an exploding shell or exposure to continued loud noises, as in many industries.

The diagnosis in most cases is not too difficult. A careful history will usually suggest which group to suspect. The most frequent type of deafness seen is the conductive type, and the most common variety is the chronic catarrhal type. If the history reveals frequent colds over a long period, associated with earache and discharging ears, then the diagnosis is likely to be a chronic catarrhal type. Examination of the above type of patient will probably reveal a markedly retracted sclerotic type of ear drum, with calcified deposits, scars, and perhaps healed or unhealed perforations. On the other hand, the ear canal and drum may appear perfectly normal, in which case a nerve deafness or otosclerosis is suspected.

Ear wax is seldom found in deaf persons, but there are exceptions to this rule as there are to all others. Atrophic changes of the inner and middle ears are usually but not always extended to the external canals resulting in a lack of normal cerumen.

The patient frequently says that he can hear but that he cannot understand. This is because he can hear certain tones but is deaf to other tones, resulting in his hearing only parts of a word. If he has a nerve deafness he may be able to hear low tones well, but hears high tones very poorly. This may be compared to a person trying to read a newspaper which has been cut full of holes.

After the history has been taken the patient is then examined. The hearing is tested last so that cerumen if present or any other obstruction may be removed beforehand. The best ear is examined first so that pathology in the poorer ear will be more outstanding. The external canal is examined first, and then the ear drum. The presence or absence of defects, perforations, discharge, landmarks, retraction, transparency or opacity of the drum, cone of light, and the appearance of the middle ear seen through the ear drum, if transparent, are noted.

If the ear drum is retracted, dull, and sclerotic in appearance then the chronic catarrhal type is being dealt with. Time will not permit detailed findings in the other ear conditions.

The next step is to investigate the state of hearing. Whispered and spoken voice tests are easy to do, providing a quiet place is available. Tuning forks C 64 and C 4 (high C) are necessary parts of the otologist's armentarium. If the examiner's hearing is normal the patient's hearing may be compared. One of the standard audiometers is very useful and almost essential in detecting the very early cases of deafness, and also very useful in determining the progress of a patient. Is he improving or not? A 5 per cent loss or gain is very easily detected with the use of the audiometer. These tests are run by the office assistant and only require a few minutes to do.

Now that the diagnosis has been arrived at, what is to be done for the patient? It is small comfort to the patient to be told that he has some high sounding diagnosis but that there is no adequate treatment. The first consideration is to arrest, if possible, the course of the disease process, and to improve the hearing that is left.

Most of the cases of deafness in children are of the catarrhal type. The openings of the eustachian tubes in the nasopharynx are obstructed by lymphoid tissue, either the adenoids, or, if the adenoids have been removed, then by lymphoid tissue which has recurred or enlarged following the removal of the adenoids. This type of patient as a result of the closure of the eustachian tubes has an absorption of the air from the middle ear, resulting in retraction of the ear drums. At times mucus is aspirated into the middle ears from the nasopharynx, causing more deafness. If the mucus organizes, permanent adhesions form between the ear drum and the wall of the middle ear. This type of patient is markedly benefited by irradiation of the nasopharynx according to the method of Crowe or by x-ray treatment. If radium is used, it is passed through the nose into the nasopharynx in a monel metal applicator 1.5 mm. in diameter and about 6 inches in length. The tip of the applicator carries the radium (50 mg.) and is so placed that the chamber of radium is in contact with the eustachian tube opening. This may be checked by the use of the nasopharyngoscope in the other nostril. The radium applicator is left in place 8 minutes. Three treatments are usually required at intervals of 25 days, although in some cases more treatments may be necessary.

Usually in 3-4 weeks a marked improvement has occurred. The pharynx is beginning to look more normal. The red congested granules of lymphoid tissue have begun to disappear. The ears appear more normal on examination, and the patient's parents usually comment that Johnny sleeps more quietly and seems to hear better. Audiometer tests show definite improvements. In adults the same thing applies. In adults, as well as children, the ear drums lose the opacity, and in a few months even regain the normal transparency.

Irradiation of the nasopharynx has been done by Dr. Crowe, at Johns Hopkins, for about 10 years, but did not gain a great deal of popularity until World War II. In our Air Forces thousands of flyers suffering from aerotitis were treated by irradiation of the nasopharynx. Results were dramatic in most cases. In some cases irradiation was combined with surgical removal of lymphoid tissue from the nasopharynx.

In conclusion, I feel that the hard of hearing patient should be encouraged to help himself: First, by receiving adequate treatment; second, by being encouraged to persevere in the use of a hearing aid until it becomes a great benefit; third, by being taught lip reading.

Discussion

Dr. E. R. Mayerberg (Wilmington): I thoroughly enjoyed Dr. Marvil's paper. I am glad that he has not laid too much stress on the benefit of treatment in any type of deafness. I would be most discouraged in all of my practice in treating ears if I had not made some progress, but in the last 50 years, with all the progress in medicine, we made less progress in ear work than in any other branch. It is true in some forms, in the otosclerotic type, that the fenestration operation does offer some help, but do not be too cheerful about that: the operation is still in the experimental stage. Results have been good in some cases that I have seen, for two or three years, and then the fenestration closes over with very dense fibrous tissue and the patient is just as bad off as before he was operated on.

Dr. Lempert and others are continually working to improve this type of operation. They are now using the tympanic membrane to

cover the opening in the labyrinth, and they believe that offers more than any other type of operation up to this time: time will show. It has not been used long enough to arrive at any definite conclusions. The point I make here is, do not shoo your patients off for the fenestration operation unless you are sure first of your diagnosis and then that you are sure of the individual who is going to operate on that patient. The operation will probably fall into disrepute, because it will be tried by many inexperienced persons who are not qualified to do the operation. So be careful with the man you select to do your operation. I do not believe that the average otologist is qualified to do the fenestration at this time unless he has had a lot of experience in the laboratory and has followed one of the masters in the work.

I happen to know of several men nearby who are attempting the operation. They do say to the patients—they are leaving a loophole—"We aren't promising you a thing with this operation. You can have it if you want it. I don't insist that you have it, but if you want it, I will try it." I have seen 4 of those patients who have not been helped at all. In the first place, two of them were not the right type for the operation.

Prevention of deafness so far has offered more than any treatment or any type of cure that we have had to offer. Prevention of diseased tonsils and adenoids and follow that up by deep x-ray and radium if necessary. A word of caution here. If the nasopharynx is cleaned out you must remove the adenoid tissues, because the adenoid tissues are bringing about some lymphoid condition in the ear. Slap-dash surgery is not any cure to the nasopharynx If the adenoids and tonsils are to be taken out, they should be taken out and the area around the nasopharynx be cleaned. To my mind it is a lot more important to get the adenoid tissue out than the large mass because that adenoid tissue is subject to inflammatory changes and will cause middle ear involvement and means deafness. So there, again, your surgery must be thorough.

There have been many injections, many types of drugs offered in the last few years, and in my journals I find extravagant accounts of progress in this field due to the administration of these drugs, Jacobson's solution, prostigmine, etc. I have a stack of audiograms of all types of deafness and I have used all of these preparations and I cannot say that I have seen one single case that has shown as much as a 5-10 decibel improvement due to the administration of those drugs. I am still experimenting and hoping that some day I might find a group of cases that will show the results that are reported in the journals today. So far I have been very disappointed. Thank you.

DR. W. M. PIERSON (Wilmington): I enjoyed Dr. Marvil's paper very much. It is a very timely subject, one that is interesting not only to the otologists but to physicians as well as laymen.

Quite often I say to a patient—"Of course, you won't believe it, but a person who may be going blind, as bad as that is, is not as unfortunate or will not be as unhappy as the patient who is going deaf." Dr. Marvil pointed out that very deaf patients feel very, very unhappy because they feel as if they are out of this world, and the blind patient, as a rule, seems to be very much more happy, but you can't convince a blind person of that. However, that is my experience.

There are many interesting points that Dr. Marvil mentioned that I would like to take up, but time limits that and I would just like to say a few words about the cases that we are able to do something with; namely, the types of conductive deafness in children due to infections or to hyperplastic tissue, adenoid, and nasopharynx.

Dr. Crowe has done a wonderful work on this subject, and his irradiation treatment is undertaken almost everywhere at the present time. The radium applicators are available to any one and the treatment may be done as an office procedure and is not necessarily a hospital procedure.

Before undertaking this treatment it is necessary that the nasopharynx be removed of all tissues that are surgically removable. A child may have his tonsils and adenoids out for deafness followed by almost complete recovery and yet in a few months the deafness may return. Inspection of the nasopharynx shows no evidence of adenoid tissue. It may not show the evidence of hyperplastic change in the eustachian tube, but you must remem-

ber that the tissue extends into the eustachian tube which you cannot see and yet that may be responsible for the deafness and only irradiation by x-ray or radium will take care of the case. Now, which is the better, x-ray or radium? X-ray is better for some cases. In a very young child, 3-4 years old, only the otologist understands what a problem it may be to inspect the child, let alone trying to treat it without a general anesthetic. In a case such as that, x-ray treatment in competent hands is the more satisfactory. Many of these cases have lymphoid hyperplasia, so that x-ray treatment would be more satisfactory.

However, in a case where the nasopharynx is comparatively free of tissue and tube is comparatively normal and you want treatment concentrated on the orifice of the eustachian tube, radium application is the better. Formerly it was argued that radium was indicated because it meant just one treatment, whereas x-ray therapy meant the patient going back to the radiologist or roentgenologist 5-6 times However, at the present time it is accepted that irradiation by radium is not successful with one application, but it is even felt that after three applications we cannot expect too much. The frequency with which it is given is about every 3-4 weeks and it is not until after the 3rd treatment that we can expect to show any improvement.

I agree with Dr. Marvil and Dr. Mayerberg that the fenestration operation is a highly specialized one, contrary to what the public has read in Time or Reader's Digest. The technique is still changing, and I agree that until it reaches a point where it is uniform it is better to refer our patients to those who have had the opportunity to work on a large number of clinic patients.

I would like to mention one patient I have known for a period of 25 years, a female, who 25 years ago could not hear ordinary conversation. She had the operation 3 years ago. She does not wear a hearing aid, and she can sit in this audience and hear everything that goes on.

Dr. W. T. Reardon (Wilmington): Dr. Marvil covered the field pretty well, but I would like to mention a few things he didn't go into very far, and one of the things is the question of lip reading, in those patients that Dr. Marvil spoke of who know that they have deafness and that there is not a whole lot that is going to be done about it. I think the most important thing we can do to help them is to tell them immediately to go somewhere and learn lip reading, because you can learn lip reading a whole lot better when you have some hearing left. These patients have a more difficult time learning when their hearing is gone beyond the conversational and loud tones. Adults cannot pick up the method as well as the children, so if this is started among the children it can be a big help to those who are deaf.

Another point that Dr. Marvil mentioned concerns the man with occupational deafness, the patient who has been working in a boiler factory somewhere for 20 years. Maybe he comes in, and nothing can be done about the deafness. That point is going to be taken up some day. Probably not a whole lot can be done about it now, but that is the result of industry. The man became deaf because of the type of work he was doing and he hasn't been protected, but eventually that lesion will be compensatory.

Another point is our school children with obstructive deafness. They may be up in the third, fourth or fifth grades and they are called dunce, the dummy, and they are left back, and after a while some one says: let's examine the nasopharynx, and there is the cause of the child's deafness. It would help in the rehabilitation of these children if these things were taken care of before they go to school. The school could also help a great deal.

Another thing that can help your patients is the hearing aid. Patients will come in to you after they have gotten a hearing aid without going to the otologist first: some one else got a hearing aid so they got one. As a result of that they will have 3-4 hearing aids tucked away in a drawer. Tell these patients that they are going to get a hearing aid to go somewhere and have a model made that will fit the ear. That thing they can attach to any hearing aid, and that is the best type of apparatus for your hearing aid. Most of your hearing apparatus are stuck inside the ear or they stick on the outside of the ear, but you can hear better with this molded type that is made.

Then the patient can take this mold and go

around to the different people who manufacture and sell these types of hearing aids, pick out the one he likes best, make a deposit and use the hearing aid for maybe a month and then in that way they can pick out the hearing aid that will suit them best and buy that one.

DR. JOHN MCK. MITCHELL (Rosemont, Pa.): If I may supplement Dr. Reardon's remarks, there is a clinic at the present time in Philadelphia, connected with Temple University, where patients go for exhaustive studies to determine the type of hearing aid they need.

This plan of Dr. Reardon's to get the ear piece and then go around and try the different aids is good, but it would be still better to go to a clinic, like the one at Temple, and let them determine there just exactly the type of hearing aid they need. That clinic has just been started in the last few months.

URETERO-INTESTINAL ANASTOMOSIS WITH TOTAL CYSTECTOMY IN VESICAL CARCINOMA*

BRICE S. VALLETT, M. D.,
Wilmington, Del.

The modern trend in the treatment of vesical carcinoma is toward total removal of the cancer-bearing organ.

Radium has been disappointing with the exception of the gaseous form, radon, this form serving best where used to supplement electric resection and electro-coagulation. Deep x-ray therapy also serves best when used as an adjunct to electric resection and coagulation of the growth. The results in segmental resection of vesical carcinomata are notoriously bad. When one considers that vesical cancer occurs most often in the trigonal and bladder neck areas it is not difficult to see how the use of radium and deep x-ray may adversely affect the ureteral openings and the vesical neck. In a very recent case of my own, in a man aged 51 with a tumor involving the left side of the trigone, the indications suggested total cystectomy. As there was not wholehearted support on the part of the family and not having the courage of my convictions I elected to electrically resect the growth and then implant radon seeds into the tumor base. There was much pain subsequent to the radon implantation, with an early occlusion of the left ureteral orifice. Ultimately a stricture developed in the right ureter due either to radium reaction with fibrosis or tumor extension, and the patient died in uremia.

It is just such an experience as this that has intensified the efforts of the urologist in recent years toward the development of a safer and better uretero-intestinal anastomosis.

Graves and Thompson[1] state: "It is now realized that bladder tumors contiguous to the prostate are not controlled by radium or any other method of treatment short of complete surgical extirpation of the structure involved." These authors had performed 28 cystectomies at the time of their paper, 13 living and free of malignant disease. Of their last 20 cases since 1939, 11 are living with no apparent evidence of recurrent carcinoma.

Jewett and Strong[2] state that they: (In order to determine the conditions under which local extension and metastasis occur) found it necessary to make an exhaustive study of autopsy material. In 107 autopsy cases they sought to determine three things. The relation of depth of penetration of the bladder wall to the incidence of

1. Metastasis
2. Lymphatic capillary invasion (incipient metastasis)
3. Perivesical fixation.

The cases were also separated into three groups according to depth of penetration of the bladder wall.

Group A—Those in which tumor cells were confined to the submucosa.

Group B—Those in which infiltration had extended to but not through the muscularis.

Group C—Those in which tumor cells had extended completely through the muscle coat.

The number of cases with regional or distant metastases, the number showing perivesical lymphatic or vascular invasions, and the number with perivesical fixation of the mass was determined for each group. In each group the percentage of cases without these evidences of tumor spread gave the following figure for *potential curability*:

Group A—Submucosal infiltration—100%.

Group B—Muscular infiltration—86%.

Group C—Perivesical infiltration—26%.

* Read before the Medical Society of Delaware, Dover, October 9, 1946.

They also state "that in the majority of cases it would seem that the tumor does not metastasize until it has passed through the muscle layer." Their work also shows that perivesical infiltration and invasion of lymphatics is not simultaneous. This fact might well be the determining factor in deciding for cystectomy in cases where no other evidence of tumor spread is detectable other than perivesical infiltration. The cardinal sites of metastases are: (1) regional lymph nodes; (2) liver; (3) lungs; (4) vertebral column, including sacrum and pelvis.

The part that surgical judgment must play in dictating treament in this disease may be surmised from a summary of Jewett and Blackman's paper[3]. They state "often in cases of infiltrating carcinoma of the bladder, we do not find the same degree of differentiation throughout a single tumor and in its metastases. Single small sections, biopsy or not, do not necessarily tell what the predominant degree of differentiation in the whole tumor will be. Accurate classification of large infiltrating carcinomas of the bladder on the basis of the degree of cellular differentiation alone is impossible." Priestley and Strom[4] state that "definite indications are difficult to establish as there is no standardization as yet, experience is lacking in a large series of cases so that ultimate survival rates could be ascertained in relation to the type of lesion." They feel that cystectomy should be performed in the four following groups:

(1) Very extensive low grade neoplasm
(2) Repeatedly recurring low grade neoplasm
(3) Multiple foci of origin of neoplasm
(4) High grade neoplasm.

The following requirements must be met if cystectomy is decided upon.[1] A complete history and physical examination[2] The lungs are x-rayed for metastases, likewise the abdomen and any localized painful area.[3] Check on the circulation. Anemia that will not respond to treatment is an ominous sign.[4] The renal function is checked by pthalein and blood chemistry.[5] Intravenous urography is done, as it is felt unwise to catheterize the ureters through a cancer infested bladder. Retrograde cystography is superior to excretory cystography, and oblique pictures should be taken as they reveal the posterior portion of the bladder where tumor is most common. Cystography will often be of great help after cystoscopy has failed to give the true size of the tumor.[6] Recto-abdominal palpation of the bladder under anesthesia. Jewett[5] states that "recto-abdominal palpation under anesthesia is the most satisfactory method for determining the primary carcinoma is confined to the bladder wall. Total cystectomy as a means of cure should be considered only when the mass is completely confined to the bladder wall and movable. Recto-abdominal palpation under anesthesia in cases of carcinoma of the bladder gives invaluable aid in establishing[1] deep invasion of the bladder muscle, indicating the probable hopelessness of further conservative management[2] suitability of the case for radical cure by total cystectomy. Priestley and Strom[4] state that: "if cystectomy has been decided upon one should not proceed with complete removal of the bladder until the abdominal cavity, including the liver, periaortic nodes, iliac nodes and lymphatics close to the bladder has been explored and found free of neoplastic involvement."

Preparation of the Patient

Surgical Principles and Techniques

The preparation of the patient is important. A bland, non-residue diet is instituted for three days prior to operation. Enemata are used to insure thorough cleansing of the lower bowel, and a rectal tube is inserted before the operation is begun. The sulfonamides, such as sulfathiazol, sulfasuxadine or sulfapthaladine, are given to insure some degree of intestinal antisepsis. Streptomycin gives promise of being especially useful here. Spinal anesthesia, in conjunction with avertin or pentothal, has been the anesthetic of choice. The surgical technique varies somewhat with different operators in removal of the bladder. Some men remove it entirely through an abdominal incision. Others prefer a combined abdomino-perineal technique to insure removal of enough urethra. In one of my cases I removed the bladder, prostate and seminal vesicles en bloc through the perineum. This patient had a small fecal fistula that had developed to a faulty ureteral implantation, but as it had almost ceased draining, it was felt that perineal removal of the bladder could cause little if any

disturbance of the healed tract. The operation took a little over an hour and there was no postoperative shock. In five days, however, the patient succumbed to a localized peritonitis. At autopsy the peritonitis was directly traceable to the site of the former left ureteral implantation.

Of the various techniques for uretero-intestinal anastomosis I shall mention three. Coffey's technique No. 1 has perhaps been the one most extensively employed. It was devised according to the principle of valve action. Many cases done by this technique have developed hydronephrosis and ascending infection. However, it must be remembered that when Coffey introduced his technique in 1911 the procedure did not have the benefit of the modern urinary and bowel disinfectant drugs. Then again technical errors account for many failures.

The second technique herein considered is that of Jewett.[6] He has developed a two stage technique, at the first stage carrying over the intact ureters into freshly prepared beds in the sigmoid. After healing has taken place the distal ends of the ureters are severed below their emergence from the sigmoid a special electrode is passed into the ureteral lumen and a new stoma created connecting ureter and bowel. The distal end of the ureter is now treated with phenol and alcohol and triply ligated. There is very little chance for leakage if the technique is executed properly. In his last ten cases there was but one death, due to pulmonary hemorrhage from an undetected metastasis.

The most recent technique is that of Davalos of the New York Hospital. His experimental work on dogs has been excellent and his technique departs somewhat radically from that of many other experimenters in this field. Most men use the anterior longitudinal band of the sigmoid and make an incision in and parallel to the band. Davalos[7] makes a transverse incision in the bowel between the small mesenteric vessels down to the submucosal coat; this incision is widened and the severed end of the ureter is implanted as low down in the incision as possible. The incision is then carried into the bowel and mattress sutures so placed that when the incision is closed a flap bearing the draining or secreting end of the ureter is carried into the bowel lumen. This flap is designed to prevent hydronephrosis and ascending infection. Davalos up to July this summer had operated upon five human cases. His results will be published later.

DISCUSSION

Postoperative care consists in maintaining urinary and bowel antisepsis. One of our most promising cases when discharged from the hospital was at home one month when he was readmitted to the hospital in uremic coma induced by an acute ascending pyelonephritis. He had discontinued the use of all urinary antiseptics. An autopsy of the kidneys were studded with small abscesses, but the ureterointestinal anastomoses had healed perfectly and the pelvic peritoneum was perfectly clear. These patients after a short period of diarrhea soon get complete control of their bowels and should be cautioned not to hold the urine for more than four hours. One of my patients seemed perfectly happy after she found that she could sit through a double feature at the movies.

Priestley and Strom of the Mayo Clinic[4] state that: "If the operative mortality rate of bilateral ureterosigmoidostomy and total cystectomy can be kept within a reasonable limit, the application of this method of treatment for vesical neoplasm should become broader, providing of course one admits there are certain types of cases for which the operation gives the best chance of cure." In July of this year Dr. Ferris of the Mayo Clinic had had 17 consecutive cases of total cystectomy with uretero-intestinal anastomosis without a death, the entire operation being done in one stage and his operating time being somewhat over one hour. Results from this operation will improve as we approach technical perfection and more carefully select our cases.

SUMMARY

1. The trend of modern treatment of vesical carcinoma is toward total removal of the cancer-bearing organ.
2. The results of radium, x-ray and palliative surgery have been disappointing in the past.

3. The indications and requirements for operation are briefly discussed, as well as the preparation of the patient, and the various surgical techniques employed.
4. The importance of postoperative care is stressed.
5. Careful selection of cases and improvements in technique will improve the results in this operation.

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DISCUSSION

DR. A. L. HECK (Wilmington): I do not feel qualified to discuss Dr. Vallett's paper.

Dr. Vallett is to be congratulated on the presentation of this fine paper and for getting this film from Dr. Davalos.

DR. S. W. RENNIE (Wilmington): I would like to ask Dr. Vallett if he is using other sutures in this technique. I have in mind steel wire or one of the metal wires for the sutures in working with the intestinal tract.

We have enjoyed this paper very much, Dr. Vallett, and the pictures were remarkable. It does take a lot of courage on the part of the physician to do such a thing as Dr. Davalos and Dr. Vallett are doing.

DR. VALLETT: I want to thank Dr. Heck and Dr. Rennie for their kind discussion. I don't know of any work, Dr. Rennie, that is being done with steel wire. However, I don't see why it couldn't be used, with the exception of this anchoring suture here. The idea of using chromic catgut is to have it sluff off eventually and leave the ureter end more or less free or unimpeded. I think Dr. Jewett is using silk in his work, and as you saw here, Dr. Davalos was using silk.

Of course, this method isn't applicable to all tumors of the bladder. I hope I didn't convey the wrong impression there. The best results in vesical cancer are gotten where you can do an electric resection. Dr. Bumpus some years ago at the Mayo Clinic reviewed his results, and he had more five-year cures in vesical cancer where he had done an electric resection of the tumor than by the implantation of radon seeds. I think most men have given up radon resection. We recently had a man die, who did very well until the first thing we knew he had a metastasis through the lymph-node in the pelvis. I remember a case Dr. Colston reported some years ago where he had no segmental section of the bladder tumor and the bladder healed perfectly, but this man died of a metastasis of the brain.

When you are dealing with tumors in the trigonal area and the radium and x-ray are not safe, then it becomes a matter of surgical judgment when you shall elect to do a total cystectomy.

SPONTANEOUS HEMOPNEUMOTHORAX*

A Case Report

LEE HARRINGTON, JR., M. D., and
R. W. FRELICK, M. D.,
Wilmington, Del.

Spontaneous hemopneumothorax, in contrast to traumatic hemopneumothorax, is a relatively rare condition which develops from bleeding into the pleural cavity during the course of a spontaneous pneumothorax. In 1942 Hartzell's review of the literature revealed only 40 reported cases of idiopathic spontaneous hemopneumothorax. To these he added 3 cases, and suggested that others had occurred which had not been reported. All but one of the 43 patients were men, most of whom were between twenty and forty years of age. There was no significant difference in incidence on either side of the chest. Fourteen of the 43 cases were fatal. Since 1942 a few isolated cases have been reported.

The following report is of a case of spontaneous hemopneumothorax complicated by fibrinous adhesions and atelectasis which had a pattern found during the recent war in a small percentage of traumatic hemopneumothorax cases rather than the pattern described for typical spontaneous cases.

CASE REPORT

E. M., a 27-year-old white male, was admitted to the Memorial Hospital on June 2, 1947, because of pain in his right chest. He had been well and working as a clerk when one week prior to admission he developed a chest

* Department of Medicine, Memorial Hospital.

cold. A cough continued all week. Pain in his right scapular region was noted for the first time on the day of admission upon arising in the morning. The pain was aggravated by moving around and by coughing and gradually became more severe. By the time he arrived at work the pain was intolerable. An x-ray taken in the plant hospital at the time showed a partial collapse of the right lung. Morphia was required to ease the pain. His past medical history revealed the fact that while he was in the Army he was studied extensively for a congenital heart murmur. He had never had rheumatic fever or diphtheria. Two years ago he had had influenza.

Physical examination at the time of admission showed a young white male sitting up in bed with a moderate amount of respiratory distress and who then only had a slight amount of pain in his right chest. His lips appeared slightly dusky; pulse 96, regular; respiration 26, blood pressure 200/60 (right arm); 100/70 (left arm). Head and neck essentially normal; E. E. N. & T. essentially normal.

Chest: Expansion limited on right. Hyperresonant to percussion on the right especially at the base and laterally. Breath sounds diminished to absent on the right. Vesicular on the left. Whispered voice not transmitted on the right.

Heart: Apical impulse about 2 cm. outside the left M.C.L. in the fifth interspace. Left border enlarged to the left. Right border seemed shifted about 1 cm. to the left of the sternum. Heart sounds loud. Normal sinus rhythm. Loud systolic murmur at the apex and pulmonary areas which is loudest over the latter area. The murmur is also heard less distinctly in the third interspace to the left of the sternum and in the aortic areas and is transmitted to the neck vessels on the right.

Abdomen: Flat, no scars, no palpable organs or masses.

Extremities: Traumatic amputation of the right thumb at the distal phalanx.

The impressions at the time of admission were:

(1) spontaneous pneumothorax
(2) aortic stenosis and regurgitation
(3) relative mitral insufficiency
(4) coarctation of the aorta.

His admission laboratory work showed RBC 3.85 million, Hb 12.5 grams 80%, WBC 11,700 with an essentially normal differential. A urinalysis showed only 5-6 WBC per HPF.

June 4, 1947—Patient nauseated most of day. Vomited several times. Coffee-ground like vomitus. During one episode of vomiting in the afternoon patient became very apprehensive and mildly cyanotic. Physical findings in the chest essentially the same as on admission.

June 5, 1947—Nausea and vomiting of coffee-ground like material continued most of the night. Levine tube passed but unsuccessful in controlling nausea and vomiting. An x-ray of the chest showed a greater degree of lung collapse than that demonstrated in the film taken where he worked. There was also evidence of pleural effusion with a shift of the mediastinum to the left. The left lung was normally aerated. RBC 2.93 million, Hb 8.5 grams, WBC 17,300. Temperature up to 103.4°. Placed in oxygen. Started on penicillin 100,000 units stat, then 50,000 units every three hours. Given 500 cc. whole blood transfusion.

June 6, 1947—Temperature 103.3°. Patient appeared to be more tired and weaker. Marked pallor persisted. BP 60/? left arm, 110/? right arm. Left chest clear. Percussion note was still dull at the right base. RBC 3.06 million. Hb. 7.5 grams. BUN 114 mgm%. Blood Chlorides 430 mgm%. Creatinine 4 mgm%. Given another 1000 cc. whole blood.

June 7, 1947—Temperature down to 102°. RBC 2.60 million. Hb. 8.5 grams, WBC 28,600. BUN 132 mgm%. Creatinine 4.5 mgm%. Given another 500 cc. whole blood. A right thoracentesis in the 7th interspace in the post-scapular line produced 150 cc. of old blood. The needle was introduced again in the 2nd interspace anteriorly and 760 cc. of air was removed.

June 8, 1947—Temperature 101°. A chest x-ray showed evidence of a considerable increase in the amount of fluid in the right thorax. The right lung was still markedly collapsed and there was a considerable shift of the mediastinum to the left. 510 cc. air plus 15 cc. blood removed by a right anterior thoracentesis in the 2nd interspace.

June 9, 1947—RBC 3.10 million, Hb 10.5

grams. BUN 78 mgm%. 1400 cc. old blood removed from right chest by thoracentesis in the 6th interspace mid-axillary line.

June 10, 1947—An x-ray showed the entire right chest cavity to now be obliterated by a very dense homogeneous shadow, apparently due to an increased amount of bloody fluid in the right chest cavity. 1630 cc. dark blood evacuated by a right thoracentesis.

June 12, 1947—Temperature normal. Penicillin discontinued. An x-ray showed a considerable re-expansion of the right lung since the previous examination was made. There was still, however, a marked amount of fluid and probably exudative pleuritis. 2000 cc. old blood removed by thoracentesis in the right 9th interspace in the post-scapular line.

June 13, 1947—Temperature normal. Another x-ray showed the right lung to be partially expanded but it was felt that it was only the upper lobe that had become aerated. The partially expanded upper lobe was surrounded by a dense material consisting of a small amount of fluid and a large amount of blood clot and fibrin.

June 14, 1947—750 cc. of liquifying blood removed by going in the 9th interspace.

June 20, 1947—75 cc. thin brown fluid removed by thoracentesis. There was no essential change in the thickened peripheral pleura in the right chest which could be demonstrated by x-ray.

June 23, 1947—180 cc. thick dark fluid removed from the right chest. Seen by chest surgeon who recommended decortication of the lung and removal of all the clots.

June 24, 1947—EKG done and interpreted as being normal. BUN 20 mgm%.

June 29, 1947—300 cc. thick blood with clots aspirated from right chest.

July 2, 1947—Pleural fluid reported as sterile.

July 5, 1947—X-ray showed the extreme pleural thickening to have increased causing greater compression of the right lung.

July 7, 1947—A decortication of the right lung and an evacuation of the pleural exudate were done under cyclopropane endotracheal anesthesia.

July 9, 1947—A post-operative x-ray of the chest showed a considerable amount of air getting into the right lung. Culture of pleural fluid reported as negative after forty-eight hours. Allowed out of bed.

July 10, 1947—Patient ambulatory.

July 11, 1947—X-ray of chest showed a fluid level in the lower portion of the right chest. No evidence was seen of expanded lung in the upper right thorax. There was evidence of an almost completely collapsed lung in the mediastinum and portions of the lower thorax. It was believed that the patient had had either another lung blowout or that air might have been inserted by aspiration.

July 13, 1947—Afebrile. RBC 4.38 million, Hb 13 grams.

July 15, 1947—X-ray showed about 40% re-expansion of the right lung.

July 16, 1947—TPR normal. 500 cc. air removed from the right chest.

July 18, 1947—550 cc. air removed from the right chest. Fluoroscopic examination showed a small amount of fluid at the base, a diaphragm that moved poorly and a right lung that was now about 65% expanded. TPR normal. Discharged from hospital on this, his 11th post-operative day.

Addendum: During the week of October 6, 1947, patient reported as being at work every day. Fluoroscopy showed lung to be completely re-expanded and only a small area of thickened pleura at the right costophrenic sinus.

Seventy to ninety per cent of all cases of spontaneous pneumothorax are known to occur following tuberculosis[2]. On the contrary, there was no evidence of tuberculosis in the majority of the 49 cases of spontaneous hemopneumothorax collected by Hopkins[3]. Other causes of spontaneous pneumothorax are abscess or gangrene of the lung, bronchiectasis, pneumonia, septic infarct, rupture of an emphysematous vesicle (e. g. in asthma), rupture of a cyst in a congenitally cystic lung, gas bacilli in a pleural effusion, perforation of the esophagus, and rupture of a gastric ulcer or of a liver abscess through the diaphragm.

The usual explanation[1] for the occurrence of a pneumothorax in an otherwise healthy individual is the rupture of a valve vesicle situated near the pleural surface or rupture of pleural bullae, both of which have been demonstrated in autopsy specimens. In addition Macklin[4] points out that in experimental insufflation of cats' lungs pneumothorax results when air

escapes out of the alveoli into the perivascular sheaths. It then dissects through the interstitial tissue into the mediastinum. The pneumothorax occurs when the thin mediastinal wall ruptures into the pleural cavity. In Macklin's experiments he was not able to demonstrate rupture of the pleural surfaces in any of his animals. He suggests that in man the increased intra-pleural pressure necessary to cause such an extravasation of air could occur with a mucus plug closing a bronchus in expiration but not in inspiration. One might find this situation, for example, in peripheral atelectasis when the air under increased pressure cannot escape to other portions of the lung. Further evidence that this mechanism occurs in man comes from Hammon[5], who has reported pneumothorax in two of seven cases of spontaneous mediastinal emphysema, and from Miller[6] and Goldman[7] who both reported cases of pneumothorax following atelectasis, the former in association with mediastinal emphysema.

Bleeding is thought[1] to result from a torn pleural adhesion or from ruptured bullae (which have often been shown to have vascular walls). In most of the autopsied cases reviewed by Hartzell, however, no source of bleeding was found. The most likely source of massive hemorrhage would seem to be bleeding from parietal vessels which have a higher pressure than those in the lung. This is a known factor in bleeding following artificial pneumothorax for tuberculosis. A less likely cause is rupture of vascularized bullae, as they would probably be collapsed by the spontaneous pneumothorax. Korol[9] gives this latter explanation for the relative infrequency of bleeding in spontaneous pneumothorax in tuberculosis.

Hemoptysis is rarely reported. Hartzell mentioned it in two of his cases. One patient had transient blood-tinged sputum while the other brought up about an ounce of blood.

Spontaneous pneumothorax is suggested by sudden pain in the thorax followed by progressive dyspnea. Bleeding into the chest may occur almost immediately or be delayed several days. Hopkins[3] noted that delayed bleeding was usually preceded by an episode of pain, probably due to tearing of pleural adhesions. Bleeding may be noted by physical signs (auscultation and percussion), and/or by clinical evidence of blood loss. Massive bleeding necessitating blood transfusions has been reported in only a small number of cases.

Snively[8] noted that no recurrent case of spontaneous hemopneumothorax has been reported, in contrast to the numerous reports of recurrent spontaneous pneumothorax. In fact, Goldman[7] injected blood into the pleural cavity in one of his cases of spontaneous pneumothorax to prevent recurrence. However, he reported another case of massive hemopneumothorax followed in six weeks by spontaneous pneumothorax on the same side and noted there were two others reported in the literature.

Blood in the pleural cavity is usually unclotted. This fluidity as explained by Trausseau (quoted by Hartzell) is due to the rapid defibrination of the blood by heart and respiratory movements which cause fibrin to deposit on the pleural surfaces. Massive deposits of fibrin have been found in some autopsied cases but not in all. War experience[10] has shown that massive clotting does take place in from four to six per cent of traumatic hemopneumothorax cases. Because of this, aspiration of 350 to 600 cc. of blood starting on the second to third day has been recommended without replacement of air. Simpson[11] advised immediate aspiration of air and blood in war wounds causing hemopneumothorax and stated that if complete removal of blood and air were done by a combination of apical aspiration of air and basal aspiration of blood, the reexpanded lung then prevented further complications. (The most common complication following trauma is infection, which is estimated to occur in 25% to 35% of these cases, but which is rare in spontaneous cases of hemopneumothorax.)

Most of the authors agreed that immediate aspiration may be necessary to relieve the extreme dyspnea which may occur soon after the onset of a hemopneumothorax, and in any case most of them employed aspiration starting the third to fourth day. However, some delayed much longer and it is of interest to note that one of Hartzell's[1] cases showed complete resorption of fluid in about five weeks with no attempt at removal other than for diagnosis in

spite of x-ray evidence of a fluid level covering the lower two-thirds of the lung field. Hopkins[3] found no significant difference in the progress of the aspirated and the non-aspirated patients.

The consensus of these authors was that air should be injected at the time of aspiration of blood to prevent too sudden an alteration of intrapleural pressure and possible reopening of a pleural rent causing further bleeding. In support of this practice, Hopkins pointed out the well established value of artificial pneumothorax in tubercular pulmonary hemorrhage.

SUMMARY

A case of spontaneous hemopneumothorax in a 27-year-old man has been presented. It differs from the usual cases reported in the severity of the bleeding, and the formation of massive fibrinous clots which prevented re-expansion of the lung. Surgical decortication of the lung was followed by complete recovery.

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REPORT OF A CASE OF INTERSTITIAL PREGNANCY*

OSCAR N. STERN, M. D.,
Wilmington, Del.

The interstitial portion of the tube is that portion which is found solely within the uterine muscle. It normally is 1 cm. long, and about 1 mm. in diameter. The occurrence of a pregnancy at this point is seemingly rare, and a review of the world literature up to July, 1943, by Grusetz and Polayes[1] discloses only 199 reported cases. Wynne[2] found the relative frequency of this type of extra-uterine gestation to be 1.16%, finding only 18 cases of interstitial pregnancies in 1547 cases studied. This shows that only a small proportion of all extra-uterine gestations are of this type.

According to Grusetz and Polayes, "in order for a pregnancy to be classified as a true interstitial pregnancy, the gestational sac must lie within the wall of the uterine cornua between the proximal end of the isthmic portion of the tube and its uterine orifice." Recently a case of this type was treated by us, and, because of its unusual features, is deemed worthy of reporting.

H. V., 31-year-old white woman was sent to the hospital by her family physician because of irregularity of menses. Her last normal period was December 14, 1946, and lasted its normal length of 5 days. She then had a period of amenorrhea lasting until February 13, 1947, when she again began to bleed. This time her period lasted for 9 days, only to recur 4 days later for an additional 5 days. The next 3 weeks she was completely free of bleeding, but at the end of this time bled for 9 days. This cycle repeated itself again at the end of 3 weeks. At no time did she pass any clots, nor did she have pain at any time except for the normal backache which was always present at her period time. Between bouts of bleeding there was no discharge or spotting.

On May 26, 1944, she delivered a normal male infant spontaneously after a 15-hour labor. Following this delivery the patient's temperature rose to 100° each afternoon for 6 days. The temperature then gradually fell to normal limits, and she was discharged on her 14th day. She was readmitted 8 weeks later because of continuing bleeding. Oxytoxic drugs were given, and 2 days later patient was discharged with a diagnosis of subinvolution of the uterus. Her periods then reestablished themselves without abnormality until her present illness.

Past medical history disclosed that 8 years previously she had spent 2½ years in Brandywine Sanitorium for tuberculosis. Otherwise, history was non-contributory.

Catamenia was established at the age of 13, recurred every 25 days, and lasted 3 to 5 days. There was moderate backache and cramps during the first several days.

* Department of Genecology, Memorial and Delaware Hospitals.

Physical examination disclosed an alert, intelligent white woman, who was lying in bed at complete ease. There were no signs of general discomfort, nor did the patient look particularly pale. General systemic examination was essentially negative except for her pelvis, which disclosed a marital outlet with good anterior and posterior support. Cervix was coated with blood-tinged mucus, but when this was cleansed off, was completely normal in appearance, excepting for a well-healed stellate laceration. Cervix was not particularly soft to touch. Uterus was enlarged to about twice normal size, and on the right side of the fundus was felt a smooth, rounded tumor that was not particularly painful to palpation. The uterus was anterior and freely movable, and felt firm throughout. No other nodules were palpated; the adnexal regions on both sides were normal.

Complete blood count showed 14.7 gm. (94%) Hb; 9700 WBC, with a differential of 71 polys, 26 lymphocytes, and 3 monocytes. Urine was negative.

A diagnosis of questionable fibroid nodule of the uterus associated with incomplete abortion was made, and, because of the atypical bleeding and the peculiar location of the nodule, it was thought that curettage should first be done. This was performed on April 12, 1947, and the report received on April 15, 1947, from the pathologist (Dr. J. W. Hooker) was: "Normal endometrium, early differentiative phase." There was no evidence of any decidual changes, inflammations, functional hyperplasia or malignancy.

On April 23, 1947, an abdominal laparotomy was performed under 12 mgm. pontocaine-glucose spinal anesthesia, combined with sodium pentothal intravenously. In the right uterine cornua was found a rounded, smooth tumor mass, which protruded toward the anterior surface of the uterus. The muscle forming its capsule was greenish-blue in color, and firm to the touch. Insufflation of the tube distal to it showed it to be patent up to the rounded tumor mass. The remainder of the pelvis was negative.

The tumor mass was incised, and there was shelled out an elongated, placental-like tissue. A right salpingectomy, including the removal of the uterine cornua, was then done, and the raw surfaces reperitonealized by the round ligament on the right side. There was no free blood or clots in the pelvic or abdominal cavities.

The report of the pathologist (Dr. J. W. Howard) on April 25, 1947, stated: "Received specimen of intact, elongated placental tissue, removed from right uterine cornua, measuring 5 x 2.5 x 2.2 cm. Section revealed placental-like tissue and what appears to be good embryonic membrane in the center. No fetus. Also received apparently normal appearing right tube. Lumen patent; proximal portion appears to be a small bit of placental-like tissue where the tube attached to the cornu. Blood clot from cornua reveals degenerating villi."

The patient had an uneventful postoperative course, being out of bed on her 4th postoperative day, and discharged home in good condition on her 7th postoperative day.

DISCUSSION

The diagnosis here was that which is most usually made—namely, a fibroid nodule of the uterus. However, in spite of this, the possibility of an incomplete abortion was also entertained from the menstrual history, and a curettage was therefore performed. We believe that the findings of this curettage are no more than we should expect. Frequently abdominal laparotomies are put off in cases with a history which is suggestive of extrauterine pregnancy because curettings do not disclose decidual changes. Our experience has been that where prolonged bleeding has occurred, the decidual elements are washed out of the uterine cavity early, and all that we obtain is early differentiative normal endometrium. Especially this is true where the gestational products have died.

Interstitial pregnancies, like all other extrauterine gestations, can terminate in one of several ways. The usual case terminates by the products of conception being expelled into the uterine cavity, there to go on to abortion, or to continue to term as an intra-uterine affair. The next most frequent occurrence is death of the ovum from compression of the surrounding muscle. This is believed to have been

the case here, and that death had occurred somewhere about the 2nd month.

Many cases, however, terminate by rupture into either the broad ligament or the peritoneal cavity, the latter usually causing death to the mother from hemorrhage and shock, due to the formation of the blood vessels in this area.

A Friedmann test was not done in this case, because it was felt that no living villi would be present after such a prolonged bout of bleeding.

According to Delassio, Assali[3], and others, one should suspect interstitial pregnancy whenever one feels a hard, painful tumor in one uterine cornu that is associated with an abnormal menstrual history. In this particular case the tumor mass was not painful, and could be easily palpated between the examining fingers with no discomfort to the patient. At no time did the patient show any signs of pain on either abdominal or pelvic examination.

In conclusion, the importance of pelvic examination prior to anticipated pregnancy cannot be over-emphasized. Only by this means can the attending obstetrician be sure that no abnormalities such as tumors, cysts, or congential malformations exist. He thus has a basis for comparing any abnormalities in the uterine contour which might be caused by an extra-uterine pregnancy, and thus make possible an earlier diagnosis of such cases.

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MISCELLANEOUS

New Hope in Breast Cancer

Exceptionally favorable results in treatment of advanced carcinoma of the female breast with large doses of Oreton, testosterone propionate, have been reported by clinical research workers at New York's Memorial Hospital Cancer Clinic. Dr. Frank E. Adair, in a paper published in *Surgery, Gynecology and Obstetrics* 84: 719 1947) found that more than half of even the inoperable hopeless cases of breast cancer showed improvement in general health.

Relief from pain and regression of the metastases to the bone, with formation of new bone resulted. These excellent developments were obtained in patients for whom surgery and x-ray offered no help.

Dr. Adair states "We have now arrived at the point where it has come profitable to pursue the use of hormone therapy in certain types of human cancer. Up to this time we had been hampered in our clinical research; Schering Corporation generously made it possible for us to commence our new attack employing large doses."

This report followed an earlier publication by Dr. Adair and his colleague, Dr. Julian B. Herrmann, in *Annals of Surgery* 123: 1023 (1946). Further studies on earlier less advanced cases are under way and the results of these experiments soon will be revealed.

"Since World War II, cancer research has been greatly accelerated in the United States," Dr. R. R. Spencer, chief of the National Cancer Institute, Bethesda, Maryland, says in an editorial appearing in a recent issue of *Radiology*, published by the Radiological Society of North America.

"The American Cancer Society, upon the recommendations of the Committee on Growth of the National Research Council, has allocated over $1,500,000 to cancer investigation throughout the country, and the National Cancer Institute, upon the recommendations of the National Advisory Council, has distributed $500,000 since July 1, 1946," the editorial says, adding:

"Still larger sums from both private and tax-supported sources will be available after July, 1947. The emphasis today in cancer research is shifting from studies on the carcinogenic (cancer producing) process toward chemotherapy (treatment with chemicals).

"The recent advances made in our knowledge of the sex hormones in relation to the growth of certain types of cancer, the effect of nutrition (restricted caloric diet) on experimental animal cancers, both spontaneous and induced, and the discovery that certain

chemicals seem to have selective effects on cancer cells have encouraged workers to concentrate upon the chemotherapeutic approach. No one can say, however, which approach is most promising, and the final solution may come from a totally unexpected source."

Doctor Spencer's editorial, entitled "The Present Status of Cancer Research," says that "up to the present time, search for a single cause of cancer has been fruitless." Doctor Spencer stated that cancer can now be induced at will in experimental animals by more than 200 different chemicals.

"Progress in the therapy of cancer has been relatively slow," the editorial says. "Radium, x-rays, and surgery remain our most effective weapons provided diagnosis is made early and the patient falls in expert hands."

The American College of Physicians

The American College of Physicians announces that a limited number of Fellowships in Medicine will be available from July 1, 1948 - June 30, 1949. These Fellowships are designed to provide an opportunity for research training either in the basic sciences or in the application of these sciences to clinical investigation. They are for the benefit of physicians who are in the early stages of their preparation for a teaching and investigative career in Internal Medicine. Assurance must be provided that the applicant will be acceptable in the laboratory or clinic of his choice and that he will be provided with the facilities necessary for the proper pursuit of his work. The stipend will be from $2,200 to $3,000.

Application forms will be supplied on request to The American College of Physicians, 4200 Pine Street, Philadelphia 4, Pa., and must be submitted in duplicate not later than November 1, 1947. Announcement of the awards will be made as promptly as possible.

When compared with some other diseases, the purchase price of control of tuberculosis may be considered a bargain. This is so because we know its cause. We know how it is spread. We know how to prevent it, and we know how to treat it. Moreover, it costs pennies to control it, and dollars to tolerate it. Robert E. Plunkett, M.D., N.Y. Dept. Health, Mar., 1946.

Sweden Finds Disease Rate High Among Day Nursery Children

A Swedish social welfare committee, investigating the incidence of disease in state-aided day nurseries, found that nursery children were more susceptible to disease than children who stayed at home, according to the Stockholm correspondent of *The Journal of the American Medical Association.*

Writing in the April 26 issue of *The Journal,* the correspondent states that according to the report "many of the nursery children have had colds for long periods and many have constant fever. Ear infections are far more numerous. Sinus and kidney inflammations have appeared among the nursery children, but not in the control group [children who stayed home]. Bacteriologic studies revealed that certain types of bacteria, which do not ordinarily appear in epidemic form, have caused minor epidemics at the nursery and that children are hardly recovered from one infection before they contract another or are perhaps infected with several types of bacteria simultaneously."

The investigating committee made recommendations for the installation of ultraviolet lamps and the impregnation of floors and textiles with oil to reduce the risk of infection. "With such a large percentage of Swedish mothers out at work every day," states *The Journal* correspondent, "these nurseries are of the utmost importance in the present state of society."

Student nurses often acquire tuberculosis infection as a result of exposure in the course of their training in hospitals. For them tuberculosis is an occupational disease. Physicians, nurses, orderlies, clerks, technicians and all others who have contact with patients are all subject to the hazard, although to a varying degree. Leopold Brahdy, M.D., Jour. Ind. Hygiene and Toxicology, Oct., 1945.

We have arrived at the point of diminishing returns for efforts expended in the tuberculosis program—that is, we must work harder to be sure of continued reduction in the death rate. Comm. on Tbc., N.H. Med. Soc., N.E. Jour. Med., Sept. 26, 1946.

+ Editorial +

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W. EDWIN BIRD, M. D. ..... Editor
822 North American Building

JOHN F. HYNES, M. D. ..... Associate Editor
1501 Van Buren Street

M. A. TARUMIANZ, M. D. .....Assoc. & Managing Editor
Farnhurst, Del.

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VOL. 19 OCTOBER, 1947 No. 10

THE ANNUAL SESSION

The 158th Annual Session of the Medical Society of Delaware has come to Wilmington, and gone. The House of Delegates held its regular meeting on October 13th, and transacted its business deliberately but with somewhat more dispatch than formerly. Its Transactions will be published in the December issue of THE JOURNAL.

The scientific and social program of October 14th and 15th then proceeded according to plan, as follows:

Invocation, Rev. Arthur W. Goodhand, Jr., Assistant Minister, Grace Methodist Church, Wilmington.

Address of Welcome, The Honorable Joseph S. Wilson, Mayor of Wilmington.

Report of the House of Delegates.

The Electrocardiogram in Relation to Clinical Medicine, A. Henry Clagett, M. D., Wilmington, Associate Cardiologist, Memorial Hospital.

Discussion: Drs. H. W. Gray and J. R. Durham.

The Clinical Significance of Hemoptysis in Chronic Nontuberculous Diseases of the Chest, Gerald A. Beatty, M. D., Wilmington, From the Chest Clinic, Memorial Hospital.

Discussion: Drs. W. M. Pierson and J. M. Messick.

The Anemias: A Resume, John W. Howard, M. D., Wilmington, Pathologist, Delaware Hospital.

Discussion: Drs. D. M. Gay and Charles Levy.

The Treatment of Marie-Strumpell Arthritis With Roentgen Rays, Howard H. Ashbury, M. D., Baltimore, and H. Alvan Jones, M. D., Baltimore, Assistant Orthopedist, Johns Hopkins Hospital, Baltimore.

Discussion: Drs. A. R. Shands and D. J. King.

Lymphocytic Choriomeningitis, Arnold H. Williams, M. D., Laurel.

Discussion: O. J. Pollak.

Luncheon, Wilmington Country Club, guests of the New Castle County Medical Society.

Diverticulosis of the Colon, Arthur M. Shipley, M. D., Baltimore, Professor of Surgery, University of Maryland.

Discussion: Drs. L. C. McGee, B. M. Allen, and J. G. Spackman.

The Vaginal Smear: Its Use in the Diagnosis of Uterine Cancer, John W. Hooker, M. D., Wilmington, Pathologist, Memorial Hospital.

Discussion: Drs. O. N. Stern and S. W. Rennie.

The Management of Cancers of the Head and Neck, Alfred E. Hocker, M. D., New York, Attending Surgeon, Memorial Hospital; Director, Cornwall (N. Y.) Tumor Clinic.

Discussion: Drs. E. G. Laird, J. C. Pierson, and J. F. Hynes.

The Protein Requirements of Childhood, Lee E. Farr, M. D., Wilmington, Director of Research, Alfred I. duPont Institute, Nemours Foundation.

Discussion: Drs. R. O. Y. Warren and J. W. Maroney.

Congenital Heart Disease, Edgar R. Miller, M. D., Edward M. Krieger, M. D., J. Richard Durham, M. D., Wilmington, From the Cardiac Clinic, Delaware Hospital.

Cocktail Hour, duBarry Room, Hotel DuPont.

Annual Banquet of the Medical Society of Delaware. Members and guests invited to subscribe. Dress: Informal.

Address, Federal Propaganda for the Welfare State, Marjorie Shearon, Ph. D., Washington, D. C., Research Analyst, late of the U. S. Senate Committee on Labor and Public Welfare.

Intestinal Obstruction in the New Born, Daniel J. Preston, M. D., Wilmington, Attending Surgeon, Delaware, St. Francis and Wilmington General Hospitals.

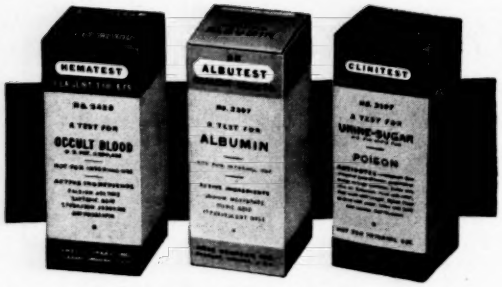
Discussion: Drs. O. A. James and R. O. Y. Warren.

The Present Status of Diabetes Mellitus, Lewis B. Flinn, M. D., Wilmington, Director of Medicine, Delaware and Memorial Hospitals.

Discussion: Dr. J. M. Barsky.

An Approach to the Problem of Alcoholism, C.

(Concluded on Page 207)



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Required by the Act of Congress of August 24, 1912, and March 3, 1933, of The Delaware State Medical Journal, Published monthly at Wilmington, Delaware, for October 1st, 1947

STATE OF DELAWARE } S.S.
COUNTY OF NEW CASTLE }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared M. A. Tarumianz, M. D., who, having been duly sworn according to law, deposes and says that he is the Business Manager of the Delaware State Medical Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation) etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912 as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of— Post Office Address

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2. That the owner is: (if owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The Medical Society of Delaware

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5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscrib-

ers during the twelve months preceding the date shown above is —— (This information is required from daily publications only.)

M. A. Tarumianz, M. D.
(Signature of Business Manager)

Sworn to and subscribed before me this 16th day of Sept., 1947.

Frank J. Corsano
(SEAL) Notary Public
(My commission expires August 1, 1949)

The Annual Session

(*Concluded from Page 205*)

Nelson Davis, M. D., Philadelphia, Physician in Charge, Saul Foundation, and Director of Research on Alcoholism, St. Luke's and Children's Hospitals.

Introduction by George H. Gehrmann, M. D., Medical Director, DuPont Co.

Discussion: Drs. M. A. Tarumianz, E. R. Mayerberg, and H. T. McGuire.

Present Trends in Prepayment Medical and Hospital Care Plans, Harold V. Maybee, Wilmington, Managing Director, Group Hospital Service.

Discussion: Drs. V. D. Washburn, and James Beebe.

Presidential Address: New Light on the History of Medicine in Delaware, W. Edwin Bird, M. D., Wilmington.

Election of President for 1948.

Luncheon, Rainbow Room, Hotel Rodney. Members, guests, and Auxiliary. Guests of the Medical Society of Delaware.

Likewise, The Woman's Auxiliary met on October 14th with a business meeting, followed by a luncheon, at which the guest speaker was Mrs. Luther H. Kice, of Garden City, Long Island, President-Elect, Woman's Auxiliary, A. M. A. Then followed a panel discussion: "Why An Auxiliary," conducted by Ira Burns, M. D., Chairman of Advisory Committee.

The Auxiliary joined the Society at the Annual Banquet on the 14th and at the concluding luncheon on the 15th. Their officers serve till the end of 1948.

To judge from the comments, the program was very well received, the high spot being the address of Mrs. Shearon, who exposed the regimenters on the national stage who would enact their scheme for socialized medicine. She was heard with rapt attention.

The Society elected the following officers for 1948:

President, Howard S. Riggin, Seaford.
1st Vice-Pres., M. A. Tarumianz, Farnhurst.
2nd Vice-Pres., Henry V'P. Wilson, Dover.
Secretary, Gerald A. Beatty, Wilmington.
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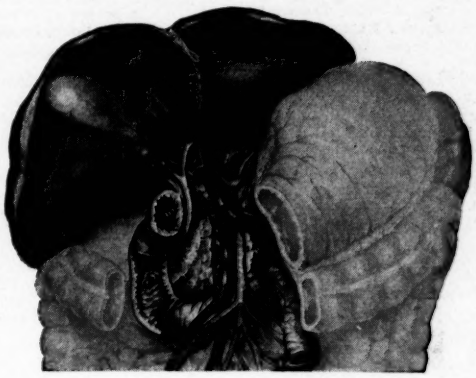
Alternate, A.M.A., Clyde C. Neese, Wilmington.

The next Annual Session will be held at Rehoboth, September 13-15, 1948.



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